Transport TX46

B4985-E

Service Engineer’s Manual

Preface

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Version 1.00

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Notice for the USA Compliance Information Statement (Declaration of Conformity Procedure) DoC FCC Part 15: This device complies with part 15 of the FCC Rules

Operation is subject to the following conditions:

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Plug the equipment into an outlet on a circuit different from that of the receiver.

Consult the dealer on an experienced radio/television technician for help.

Notice for Canada

This apparatus complies with the Class B limits for radio interference as specified in the Canadian Department of Communications Radio Interference Regulations. (Cet appareil est conforme aux norms de Classe B d'interference radio tel que specifie par le Ministere Canadien des Communications dans les reglements d'ineteference radio.)

Notice for Europe (CE Mark) This product is in conformity with the Council Directive 89/336/EEC, 92/31/EEC (EMC).

CAUTION: Lithium battery included with this board. Do not puncture, mutilate, or dispose of battery in fire. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by manufacturer. Dispose of used battery according to manufacturer instructions and in accordance with your local regulations.

About this Manual

This manual provides you with instructions on installing your Transport TX46-B4985-E. This manual consists of the following sections:

Chapter 1: Provides an Introduction to the TX46-B4985-E barebone, packing list, describes the external components, gives a table of key components, and provides block diagrams of the system.

Chapter 2: Covers procedures on installing the CPU, memory modules, PCI cards and hard drives.

Chapter 3: Covers removal and replacement procedures for pre-installed components.

Appendix: Describes the differences between mainboard BIOS and system BIOS. The cable connection tables are also provided for reference of system setup.

For information on the mainboard, please refer to the attached mainboard user's manual. You can find the detailed description about jumper and BIOS settings from the motherboard manual.

Safety Information

Before installing and using the Transport TX46, take note of the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Do not block the slots or openings on the unit which are provided for ventilation.
- Only use the power source indicated on the marking label. If you are not sure, contact the power company.
- The unit uses a three-wire grounded cable, which is supplied with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this type of plug, contact an electrician to replace the obsolete outlet.
- Do not place anything on the power cord. Place the power cord where it will not be stepped on.
- Follow all warnings and cautions in this manual and on the unit case.
- Do not push objects in the ventilation slots as they may touch high voltage components and result in shock and damage to the components.
- When replacing parts, ensure that you use parts specified by the manufacturer.
- When service or repairs have been carried out, perform routine safety checks to verify that the system is operating correctly.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- Cover the unit when not in use.

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Chapter 1: Overview

1.1 About the TYAN Transport TX46-B4985-E

Congratulations on your purchase of the TYAN Transport™ TX46-B4985-E, a highly-optimized rack-mountable barebone system. The Transport™ TX46-B4985-E is designed to support the latest four AMD® Opteron™ 8000 series 1207-pin processor, providing a rich feature set and incredible performance. Leveraging advanced technology from AMD®, the Transport™ TX46-B4985-E server system is capable of offering scalable 32 and 64-bit computing, high-bandwidth memory design, and a lightning-fast PCI-E bus implementation. The Transport™ TX46-B4985-E not only empowers your company in today's demanding IT environment but also offers a smooth path for future application usage.

Externally-accessible hot-swap SAS/SATAII hard drive bays provide high storage flexibility, while three Gigabit Ethernet ports deliver excellent network connectivity, and a slim DVD-ROM drive comes as standard. These features make the Transport™ TX46-B4985-E a totally flexible solution for a wide range of advanced processing applications.

1.2 Product Model

Model	HDD Bays	HDD Backplane	Power Supply
B4985T46V2H-E	2	2-port SAS/SATA	Single 850W

B4985T46V2H-E

1.3 Features

Enclosure
- 2U rack-mountable chassis
- Storage:
  -(1) Slim DVD-ROM (Pre-installed)
  -(1) Slim FDD (Optional)
  -(2) 3.5-inch HDD SAS/SATA II hot swappable bays
- Dimensions:
  -D 28 x W 17.12 x H 3.5 inch
  -D 713 x W 435 x H 88 mm

Processors
- Supports four AMD® Opteron™ Socket F (1207) 8000 series processors (Support Spilt Power Plane)

Chipset
- NVIDIA nForce Professional 2200 (CK804pro)
- NVIDIA nForce Professional 2050 (IO4)
- Winbond W83627HF Super I/O
- ADT7476 Hardware Monitoring IC

Memory
- Sixteen (16) 240-pin DDR2 DIMM sockets on S4985-E (four per CPU)
- Supports up to 64GB of DDR2 667/533/400 DIMMs
- Supports Registered, ECC, and four banks memory module

Expansion Slots
- Supports low-profile add-on card only
- Two (2) x16 PCI Express slots with x16 signal
- Two (2) x16 PCI Express slots with x4 signal
- One (1) 32-bit 33MHz PCI v2.3 slot

Back I/O Ports
- One (1) Keyboard & One (1) PS/2 Mouse ports
- Three (3) RJ45 10/100/1000 Base-T port with activity LED
- Two (2) USB 2.0 ports
- One (1) 9-pin UART Serial port
- One (1) 15-pin VGA port

Front Panel Features
- I/O
  -(2) USB 2.0 ports
- LED indicators
  -Power LED
  -(2) LAN LED
  -HDD Active LED
  -ID LED
- Switches
  -Power, Reset, and ID switches

Onboard Storage Controller
- Four (4) dual-port SATA controllers (two from CK804pro and two from IO4)
- Eight (8) SATA II ports support up to eight (8) drives at 3.0Gb/s
- Supports RAID 0, 1, 0+1, 5

Networking
- Three (3) Gigabit Ethernet ports
  -Two (2) Marvell 88E1111 GbE PHY
  -One (1) Intel 82541PI GbE LAN controller

Video
- XGI Volari Z7™ (XG20) PCI graphics controller
- 16MB Frame Buffer of video memory

Motherboard
- TYAN Thunder n4250QE S4985-E
- SSI MEB footprint (13 x 16-inch)

BIOS
- PhoenixBIOS on 8Mbit LPC Flash ROM
- ACPI 2.0
- Serial Console Redirect
- USB device boot
- 48-bit LBA support
- Power management: S0, S1, S4, and S5

Server Management
- Automatic fan speed control
- Supports TYAN Server Management (TSM)
- TYAN SMDC M3291, IPMI v2.0 compliant remote server management kit (Option)

Power supply
- EPS 12V, 850W with PFC
- 90~264 VAC Full range input

Regulatory

- FCC Class B (Declaration of Conformity)
- CE (Declaration of Conformity)

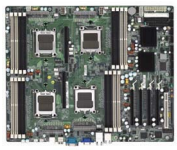
Environment

- Operating: 5ºC~35ºC
- Non-Operating: -40ºC~70ºC

1.4 Unpacking

This section describes the TX46-B4985-E package contents and accessories. Open the box carefully and ensure that all components are present and undamaged.

1.4.1 Box Contents

Component	Description
	Industry standard 2U chassis, (2) swappable HDD bays
	Tyan Thunder n4250QE S4985G3NR-E motherboard (pre-installed)
	Slim DVD-ROM drive (pre-installed)
	SAS/SATA backplane (pre-installed)
	LED and USB control board (pre-installed)
	EPS 12V 850W PSU (pre-installed)
	(4) Fans (80 mm x 80 mm)

1.4.2 Accessories

If any items are missing or appear damaged, contact your retailer or browse to TYAN's Web site for service: http://www.tyan.com.

The Web site also provides information on other TYAN products, plus FAQs, compatibility lists, BIOS settings, and more.

TYAN Driver CD

4 x CPU Heatsinks with Fans

Power Cables
Left to right: Europe, US

2 x Mounting Ears

Barebone Manual & Mainboard Manual

Screw Pack

HDD Screws

DVD-ROM Tray Cover

TYAN Logo

Rail Kit

Mounting Bracket x 4

Sliding Brackets
Front L-Bracket x 2
Rear L-Bracket x 2

Sliding Rails x 2

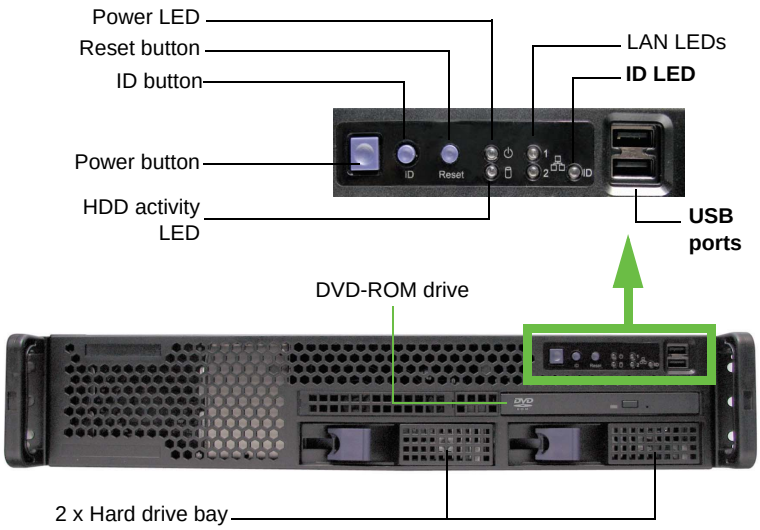
Screws Kit

1.5 About the Product

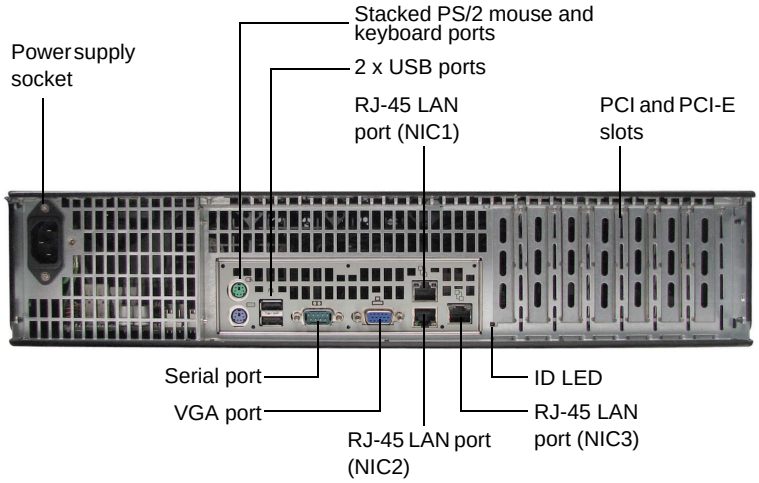
This section contains hardware diagrams and a block diagram of the TX46-B4985-E system.

1.5.1 System Front View and Front Panel

See the diagram below for details of the front panel indicators and switches.



1.5.2 System Rear View



1.5.3 LED Definitions

Front Panel

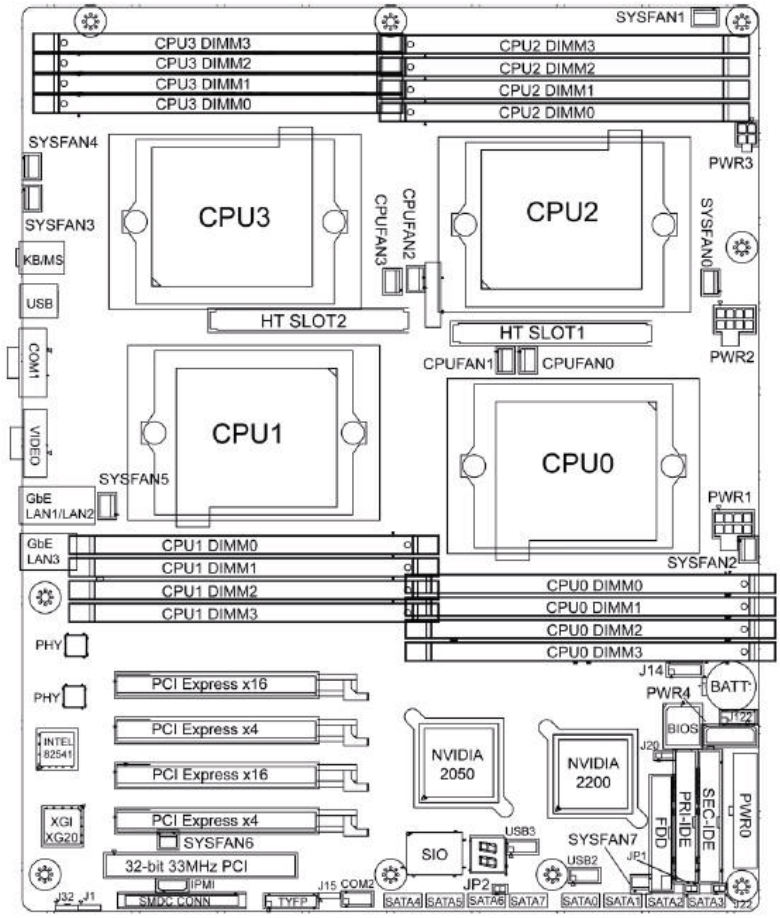
LED	Color	State	Description
Power	Green	ON	Power ON
	OFF	OFF	Power OFF
HDD Activity	Red	Blinking	HDD/DVD-ROM access activity
	OFF	OFF	No disk activity
LAN1/LAN2 Activity	Amber	Blinking	LAN accessing
	OFF	OFF	No LAN linked
ID LED	Red	ON	System is identified
	OFF	OFF	System is not identified
Hot Swappable HDD Power/Access LED	Green	ON	Power connected
	Green	Blinking	HDD access activity
	OFF	OFF	Power disconnected / No disk activity

Rear I/O LED

*Right or Left is viewed from the rear.

LED	Color	State	Description
RJ45 Linkage/Activity (Left Side)	Green	ON	10Mb/100Mb/1000Mb linked
	Green	Blinking	10Mb/100Mb/1000Mb activity
	OFF	OFF	No LAN linked
RJ45 Linkage/Activity (Right Side)	Green	ON	100Mb linked/activity
	Yellow	ON	1000Mb linked/activity
	OFF	OFF	10Mb mode or No LAN linked
ID LED	Blue	ON	System is identified
	OFF	OFF	System is not identified

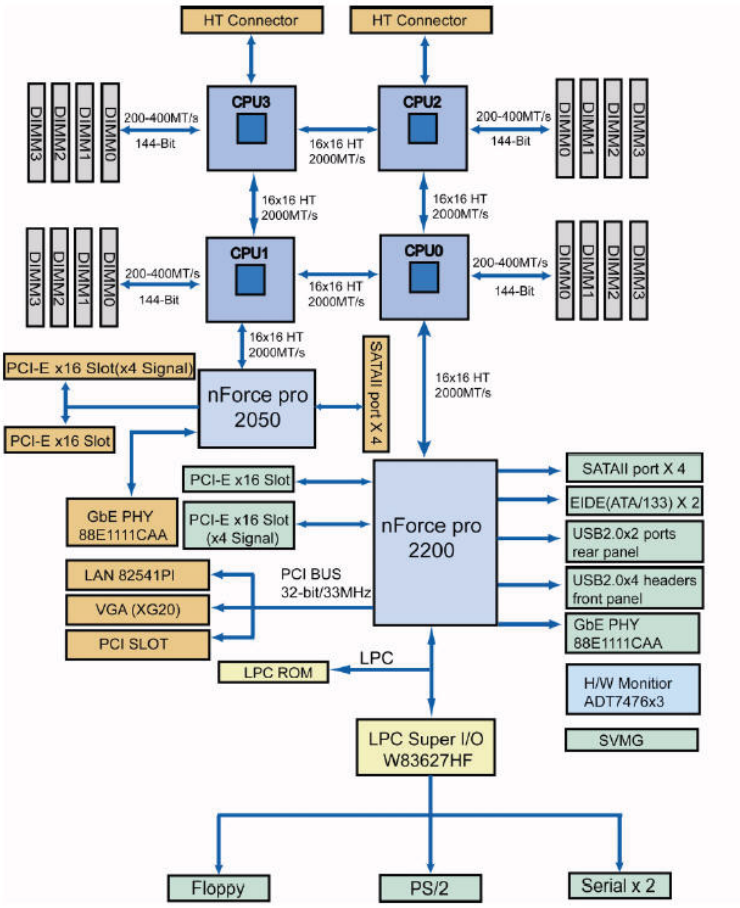
1.5.4 Motherboard Layout



1.5.5 Jumpers & Connectors

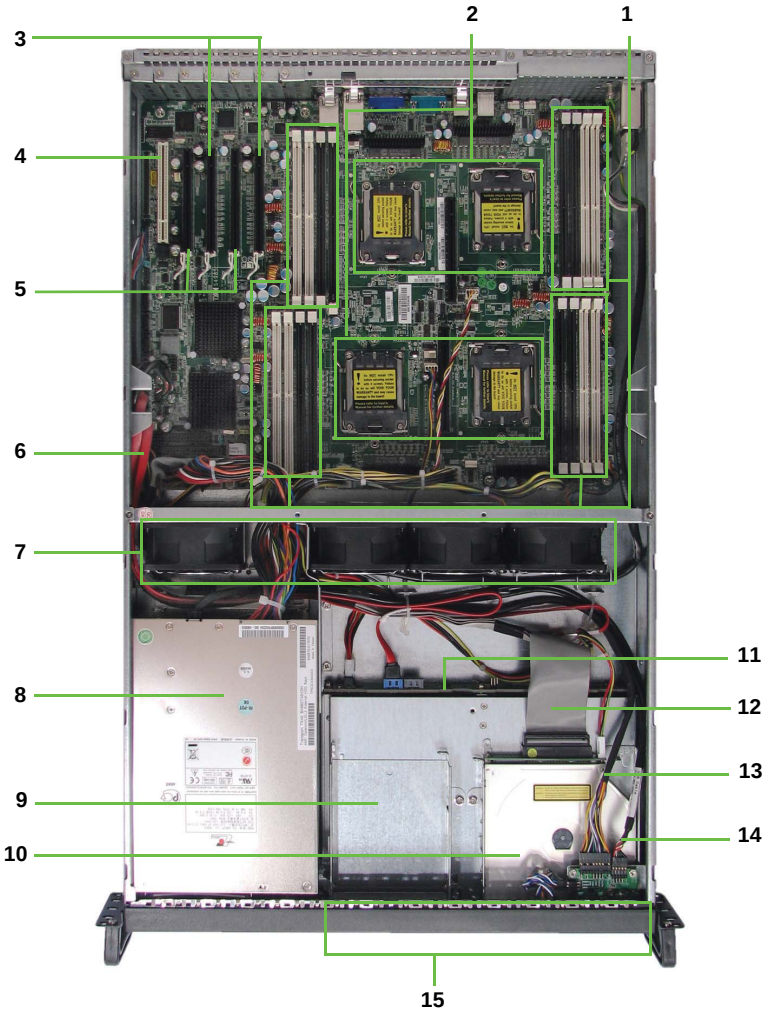
Jumper/Connector	Function
J1	SMBUS Connector
J14	Fan Connector (for barebone use only)
J20	Clear CMOS Jumper - Pin 2-3 closed: Normal (Default) - Pin 1-2 closed: Clear
J22	NMI Header
J30/J95	USB Front Panel Connector J30: USB2 J95: USB3
J101	COM2 Header
J115	Front Panel Header
JP1	RI Header
JP2	Intruder Header
CPUFAN0/1/2/3	CPU Fan Connectors
SYSFAN0/1/2/3/4/5/6/7	Chassis Fan Connectors
SATA0/1/2/3/4/5/6/7	Serial ATA RAID Connectors

1.5.6 Block Diagram



Thunder n4250QE S4985G3NR Block Diagram

1.5.7 System Internal View



1. Memory slots
2. CPU sockets
3. PCI-E x16 slots
4. PCI slot
5. PCI-E x4 slots
6. SAS/SATA cables
7. System fans
8. EPS 12V 850W power supply
9. Slim FDD drive bay (option)
10. Slim DVD-ROM drive
11. SAS/SATA backplane
12. DVD-ROM Cable
13. Front panel control cable
14. USB cable
15. Two (2) SAS/SATA HDD trays

Chapter 2: Setting Up

2.1 Before You Begin

This chapter explains how to install motherboard components including CPUs, CPU heatsinks, memory modules, and hard drives. Instructions on inserting a PCI card are also given.

Take note of the precautions mentioned in this section when installing your system.

2.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers prevents them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

2.1.2 Tools

The following tools will be required to complete the installations described in this chapter.

- A cross head (Phillips) screwdriver
- A grounding strap and/or an anti static pad

Most of the electrical and mechanical connectors in your system can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

2.1.3 Precautions

Components and electronic circuit boards can be damaged by discharges of static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport TX46-B4985-E or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from the power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

2.2 Rack Mounting

After installing the necessary components, the Transport TX46-B4985-E can be mounted in a rack using the supplied rack mounting kit.

Rack mounting kit

Sliding Rails x 2

Sliding Brackets x 4 (Front x 2, Rear x 2)

Mounting Ears x 2

Screws Kit x 1

Mounting Brackets x 4

2.2.1 Installing the Server in a Rack

Follow these instructions to mount the TX46-B4985-E into an industry standard 19" rack.

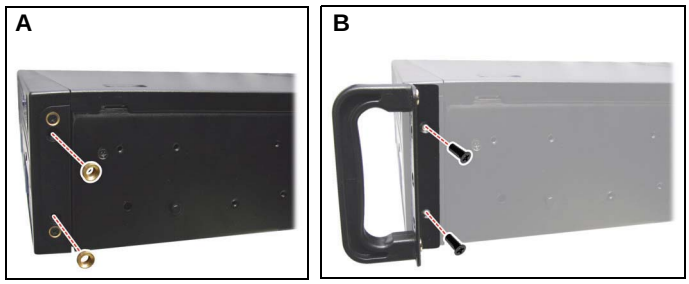
NOTE: Before mounting the Transport TX46-B4985-E in a rack, ensure that all internal components have been installed and that the unit has been fully tested. Maintenance can be performed on the unit while in a rack but it is preferable to install the device in a fully operational condition.

Screws List

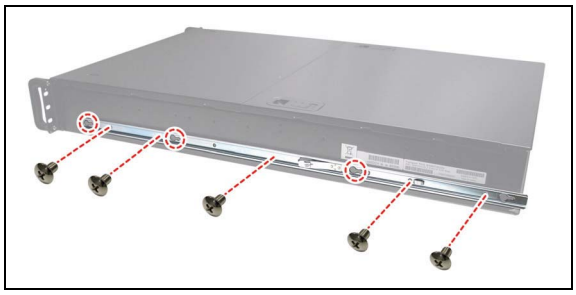
No.	Screw	Size	Quantity
A		M4-4L	8
B		M4-5L	10
C		M4-8L	8
D		M4-15L	2

Installing the Inner Rails to the Unit

1. Screw the mounting ears to each side of TX46-B4985-E as shown using two screws and washers from the supplied screws kit.

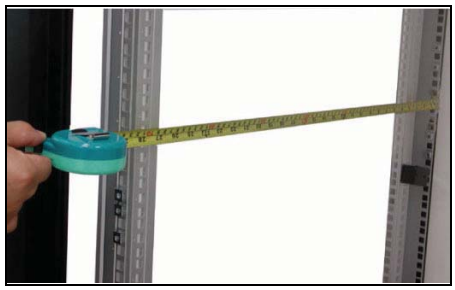


2. Draw out the inner rails from rail assembly. Install the inner rails to left and right sides of the unit using five (5) M4-5L (B) screws for each side.

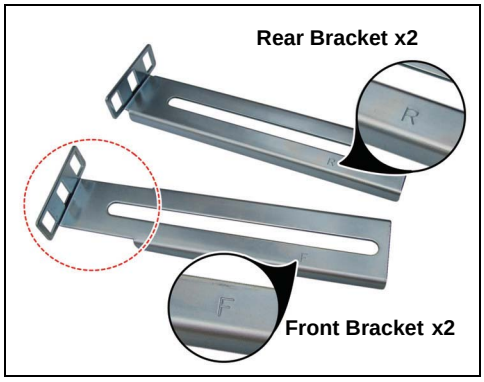


Installing the Outer Rails to the Rack

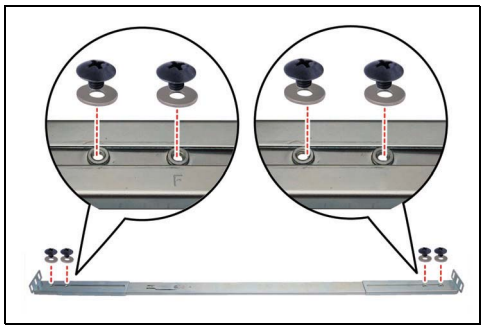
3. Measure the distance between inner side of the front and rear mounting brackets in the rack.



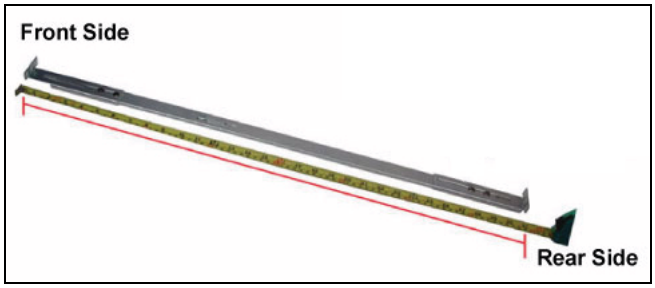
4. Locate the front and rear brackets.



5. Secure the front and rear brackets to the outer rails as shown, using the two M4-4L (A) screws for each side.



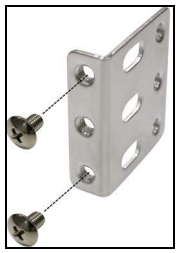
6. Adjust the outer rails to fit the length of the rack (the distance measured in step 3).



7. Secure the outer rail to the rack using 2 brackets and 4 M4-8L (C) screws for each side (**A**). Secure the mounting brackets from inside, not outside, of the rack (**B**).

A

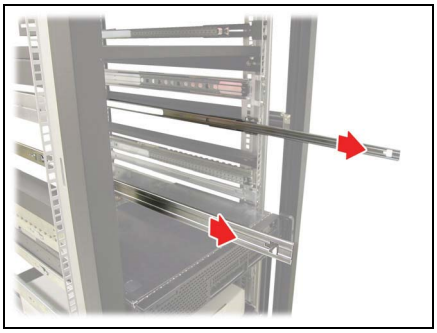
Mounting Bracket



B

Rackmounting the Server

8. Draw out the middle rail to the latch position.

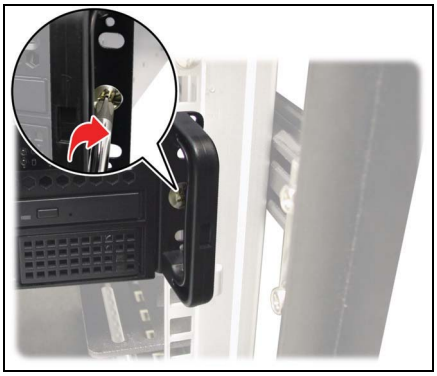


9. Lift the unit and then insert the inner slide rails into the middle rails.

10. Push the unit in and press the latch key.

11. Push the whole system into the rack.

12. Secure the mounting ears of the unit to the rack with 2 M4-15L (D) screws.



NOTE: To avoid injury, it is strongly recommended that two people lift the TX46-B4985-E into the place while a third person screws it to the rack.

2.3 Installing Motherboard Components

This section describes how to install components on to the motherboard, including CPUs, memory modules and PCI cards.

2.3.1 Removing the Chassis Cover

Follow these instructions to remove the Transport TX46-B4985-E chassis cover. This step is required before any other procedures in this chapter can be undertaken.

To remove the rear cover and expose motherboard components:

1. Pull up the two retaining clips, and lift off the cover.

To remove the front cover and expose storage media, cooling fans and power supply:

1. Remove the two screws and lift off the cover.

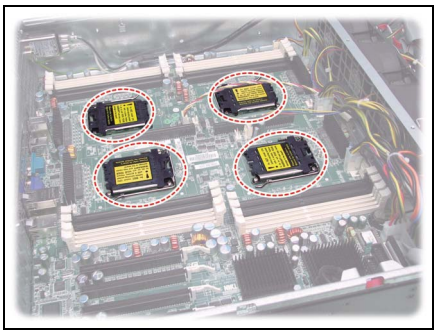
NOTE: The front cover cannot be removed without first removing the rear cover.

2.3.2 Installing the CPU and Heatsink

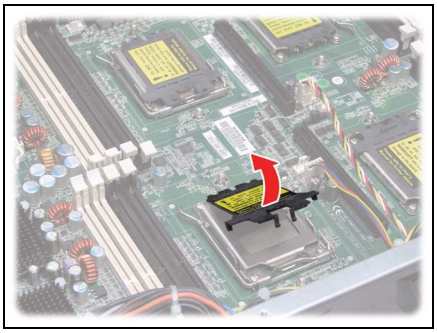
Follow these instruction to install the CPU and CPU heatsink.

NOTE: The system supports up to four CPUs. CPU0 must be installed first followed by CPU1, CPU2, and CPU3.

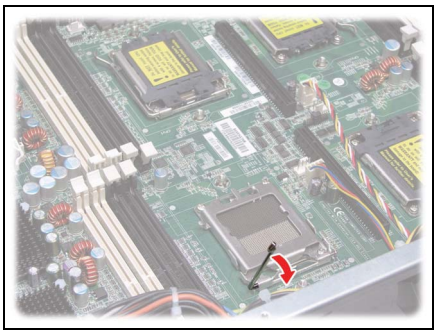
1. Locate the four CPU sockets on the motherboard.



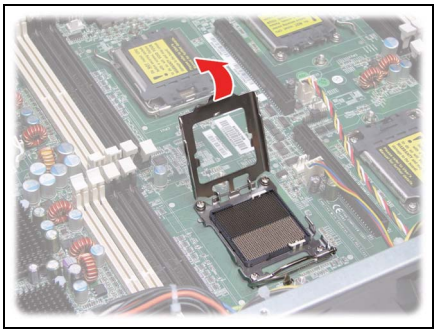
2. Take off the CPU protection cap.



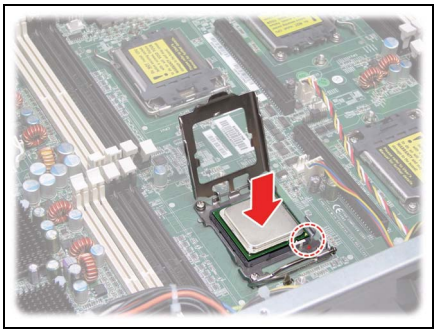
3. Lift up the CPU lever to unlock the socket.



4. Open the socket in the direction as illustrated.

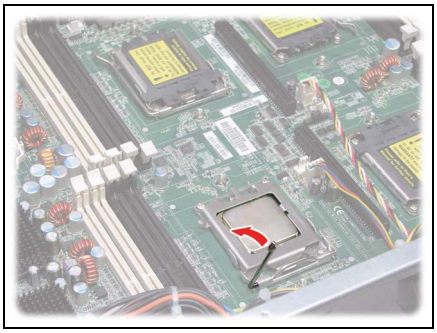


5. Place the CPU in the socket, ensuring that pin 1 is correctly located.

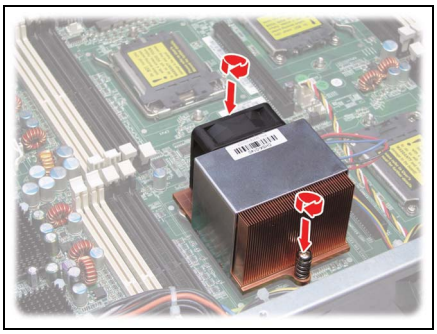


NOTE: The CPU will only fit in the socket one way. No force should be required to insert the CPU.

6. Close the socket cover and press the CPU lever down in the direction shown to secure the CPU.

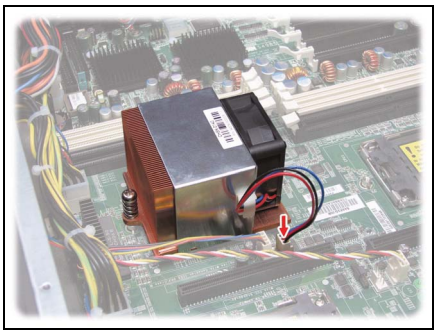


7. Place the fan and heatsink on top of the CPU and attach with two screws as shown.



NOTE: All heatsinks must be installed with fans facing the rear of the chassis to ensure efficient cooling.

8. Attach the fan power cable to the CPU fan pin header on the motherboard as shown.

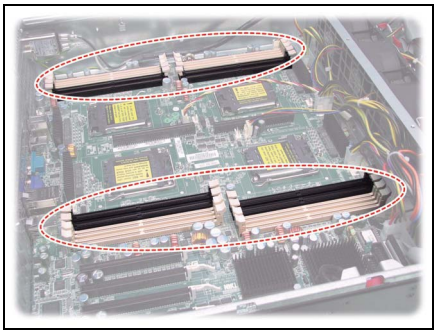


9. Repeat these steps when installing the other CPUs.

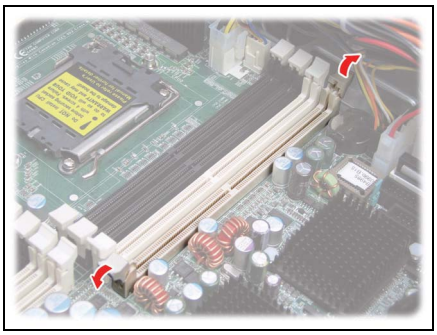
2.3.3 Installing the Memory

Follow the instructions in this section to install memory modules in your TX46 system.

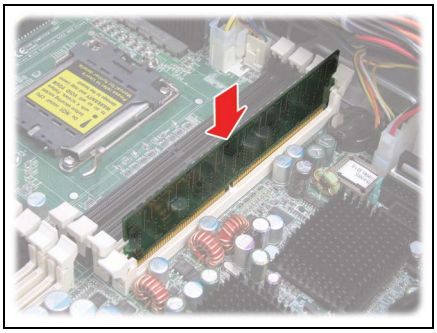
1. Locate the memory slots on the motherboard.



2. Press the memory slot locking levers in the direction of the arrows as shown below.



3. Align the memory module with the slot. The module has indentations that align with notches in the slots.
4. Insert the memory module into the slot as shown.



When inserted properly, the memory slot locking levers lock automatically onto the indentations at the ends of the module.

NOTE: Each bank memory of sockets is associated with one CPU. Memory will be recognized only when installed in a socket associated with an installed CPU.

Attention When Installing the Memory!

Refer to the following table for supported DDR2 populations.

CPU / DIMM	Single (CPU0 only)		Dual (CPU 0 and CPU1)		Four (CPU0, CPU1, CPU2, and CPU3)	
CPU0DIMM0		X		X		X
CPU0DIMM1		X		X		X
CPU0DIMM2	X	X	X	X	X	X
CPU0DIMM3	X	X	X	X	X	X
CPU1DIMM0				X		X
CPU1DIMM1				X		X
CPU1DIMM2			X	X	X	X
CPU1DIMM3			X	X	X	X
CPU2DIMM0						X
CPU2DIMM1						X
CPU2DIMM2					X	X
CPU2DIMM3					X	X
CPU3DIMM0						X
CPU3DIMM1						X
CPU3DIMM2					X	X
CPU3DIMM3					X	X

NOTE:
1. X indicates a populated DIMM slot.
2. Always install memory DIMMs in pairs starting from the CPU0_DIMM2 and CPU0_DIMM3. You can choose to install single, dual or four memory modules.

2.3.4 Installing PCI-E/PCI Cards

The TX46-B4985-E has five PCI card slots:

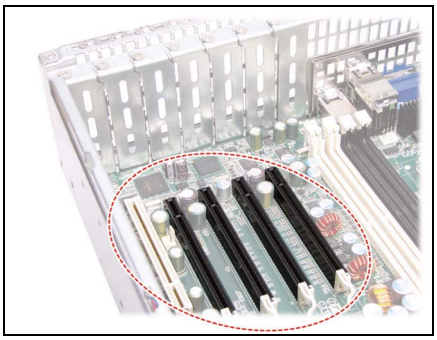
2 x PCI-E x16 slots

2 x PCI-E x4 slots

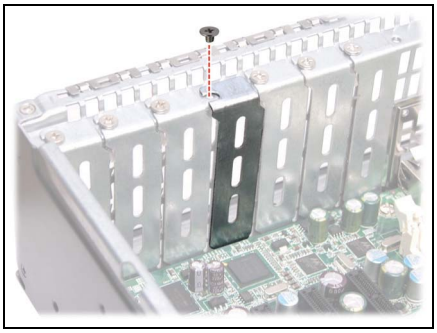
1 x PCI slot

Follow these instructions to install any of the above kinds of PCI cards.

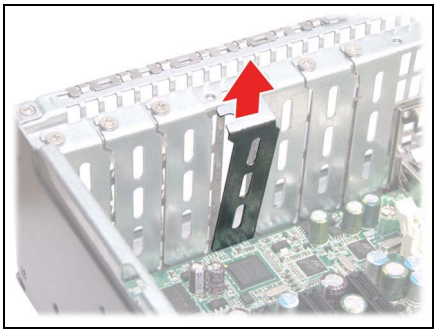
1. Locate the PCI-E/PCI card slots on the motherboard. See “System Internal View” on page 13 for the PCI-E/PCI slot locations.



2. Unscrew the blanking plate from the slot you want to use.



3. Lift up the blanking plate.



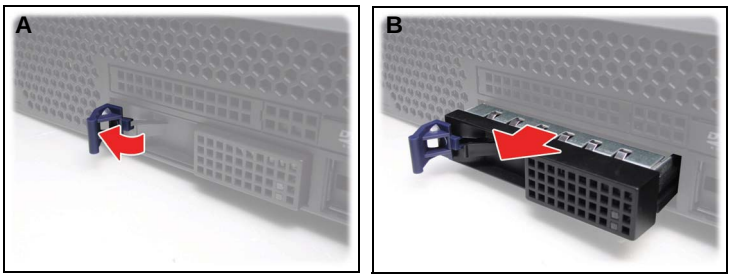
4. Insert a PCI-E/PCI card into the appropriate slot, making sure it is firmly seated. Secure it with the screw removed in step 2.

2.4 Installing Hard Drives

The TX46-B4985-E supports two serial SAS/SATA hard drives.

Follow these instructions to install a hard drive.

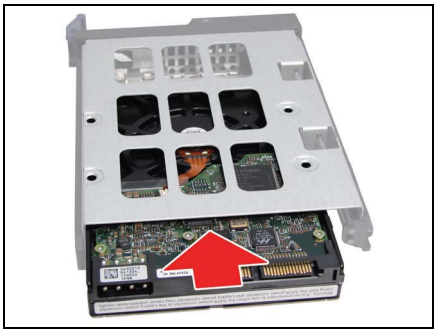
1. Pull out the locking lever (**A**) and pull the tray out of the chassis (**B**).



2. Remove the four screws holding the plastic spacer in the tray.

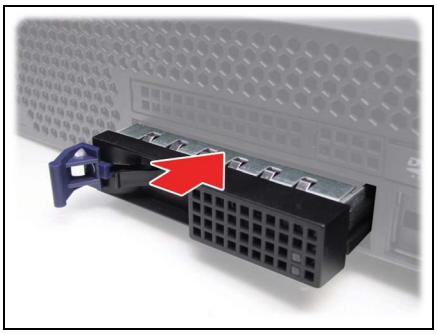
3. Remove the spacer from the tray

4. Place a SAS/SATA hard drive in the drive tray.

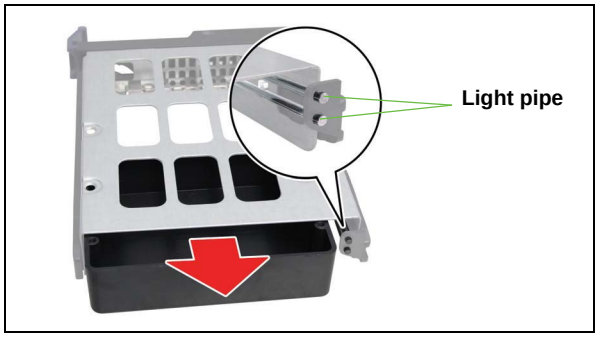


5. Secure the hard drive in place using four HDD screws.

6. Slide the drive tray back into the chassis and press the locking lever into place.



NOTE: The TX46-B4985-E is shipped with SAS/SATA backplane and cables pre-installed.

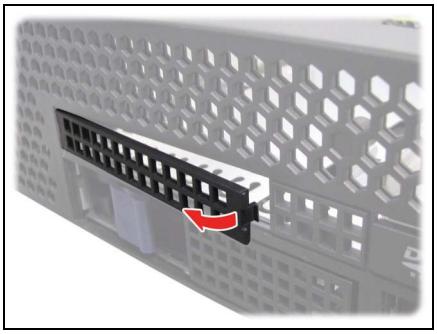


NOTE: Be careful not to damage the delicate light pipe when handling the HDD trays.

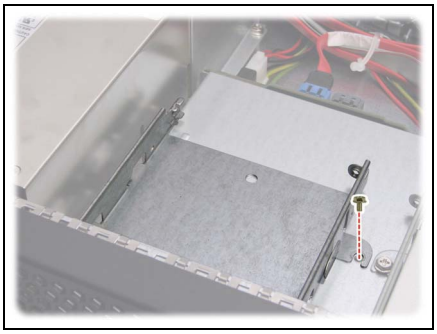
2.4.1 Installing the Slim FDD (Option)

Follow these instructions to install a slim floppy disk drive in the TX46-B4985-E.

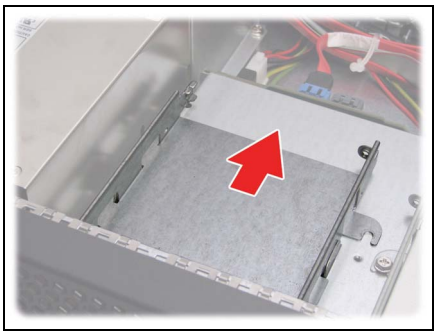
1. Use a screw driver to pull open the door of the FDD drive bay.



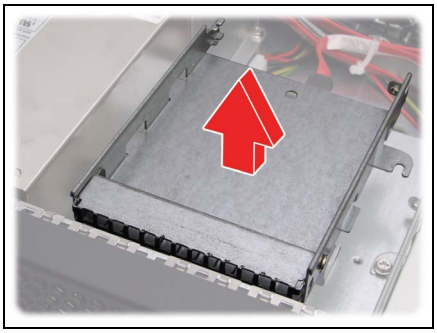
2. Remove the single screw that secures the drive bay to the chassis.



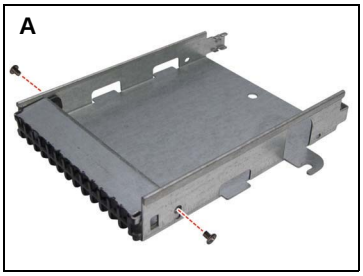
3. Slide the drive housing back.

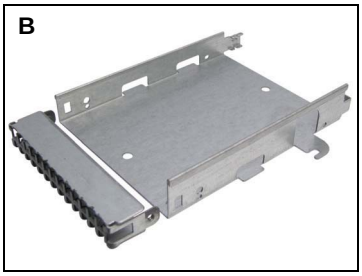


4. Lift it free from the chassis.

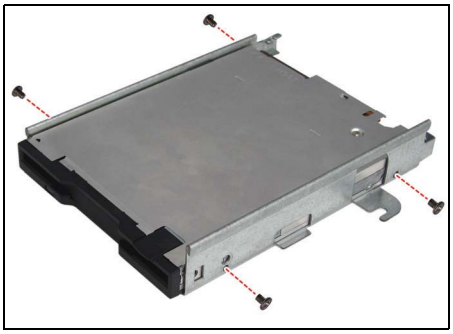


5. Remove the two screws (**A**) and separate the grill from the front of the drive bay (**B**) as shown.



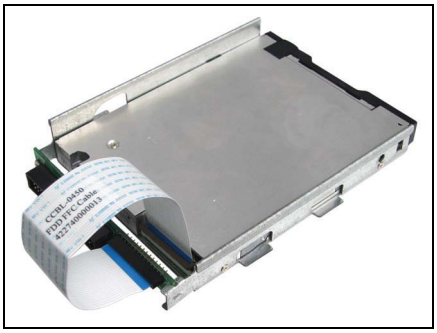


6. Install a FDD in the bay and secure with four screws.

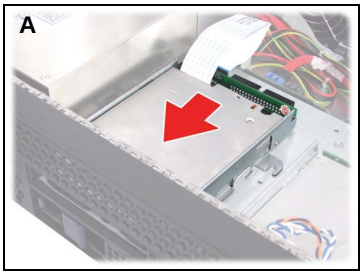


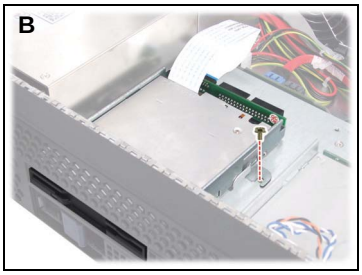
7. Secure the FDD backplane to the rear side of the drive bay with a screw.

8. Connect one end of the FFC cable to the FDD and the other end to the FFC backplane.

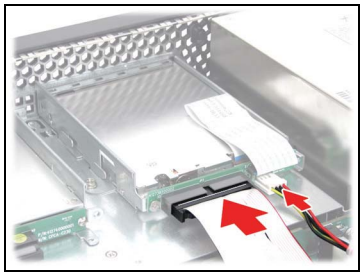


9. Insert the FDD module with the drive bay into the chassis (**A**) and secure with a single screw (**B**).

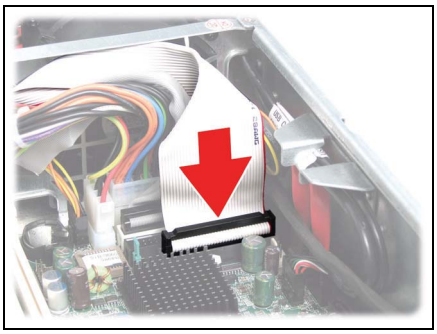




10. Locate the FDD cable from FDD kit. Connect one end of the FDD cable (as indicated below) to the connector on the FDD backplane. Then connect the power cable of FDD to the connector on the FDD backplane.



11. Connect the other end of the supplied FDD cable to the connector on the motherboard.



Chapter 3: Replacing Pre-installed Components

3.1 Introduction

This chapter explains how to replace all the pre-installed components including the motherboard, DVD-ROM drive, LED control board, SAS/SATA backplane, power supply, and system fans.

Take note of the precautions in this section when installing your system.

3.1.1 Work Area

Make sure you have a stable, clean working environment. Dust and dirt can get into components and cause malfunctions. Use containers to keep small components separated. Putting all small components in separate containers keeps them from becoming lost. Adequate lighting and proper tools can prevent you from accidentally damaging the internal components.

3.1.2 Tools

The procedures that follow require only a few tools, including the following:

- A cross head (Phillips) screwdriver
- A grounding strap or an anti-static pad

Most of the electrical and mechanical connections can be disconnected using your fingers. It is recommended that you do not use needle-nosed pliers to remove connectors as these can damage the soft metal or plastic parts of the connectors.

3.1.3 Precautions

Components and electronic circuit boards can be damaged by static electricity. Working on a system that is connected to a power supply can be extremely dangerous. Follow the guidelines below to avoid damage to the Transport TX46-B4985-E or injury to yourself.

- Ground yourself properly before removing the top cover of the system. Unplug the power from your computer power supply and then touch a safely grounded object to release static charge (i.e. power supply case). If available, wear a grounded wrist strap. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Avoid touching motherboard components, IC chips, connectors, memory modules, and leads.
- The motherboard is pre-installed in the system. When removing the motherboard, always place it on a grounded anti-static surface until you are ready to reinstall it.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress circuit boards.
- Leave all components inside the static-proof packaging that they ship with until they are ready for installation.
- After replacing optional devices, make sure all screws, springs, or other small parts are in place and are not left loose inside the case. Metallic parts or metal flakes can cause electrical shorts.

Notes:

- All connectors are keyed to only attach one way.
- Always use the correct screw size as indicated in the procedures.

3.2 Removing the Chassis Cover

Follow these instructions to remove the Transport TX46-B4985-E chassis cover. This step is required before any other procedures in this chapter can be undertaken.

To remove the rear cover and expose motherboard components:

1. Pull up the two retaining clips, and lift off the cover.

To remove the front cover and expose storage media, cooling fans and power supply:

1. Remove the two screws and lift off the cover.

NOTE: The front cover cannot be removed without first removing the rear cover.

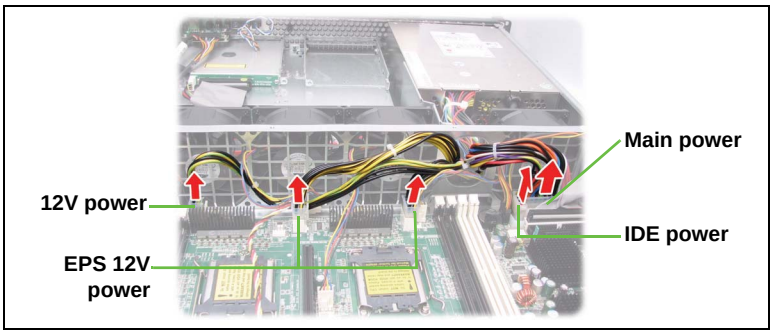
3.3 Replacing Motherboard Components

Follow these instructions to remove motherboard components and replace the motherboard.

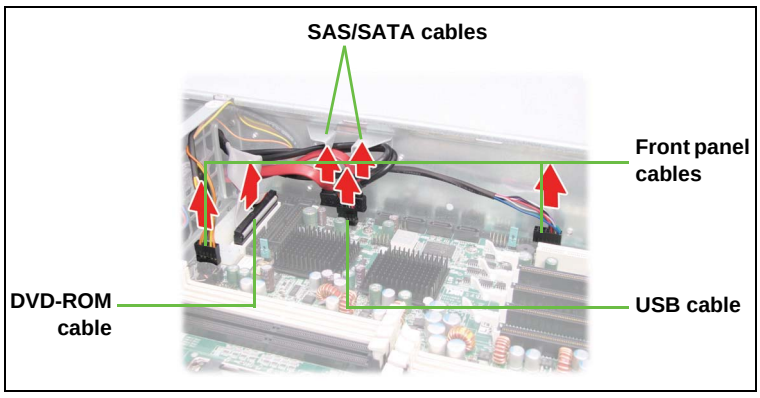
3.3.1 Disconnecting All Motherboard Cables

Before replacing the motherboard or certain components, remove cables connected to the motherboard. Follow these instructions to remove all motherboard cabling.

1. Disconnect the power cables.

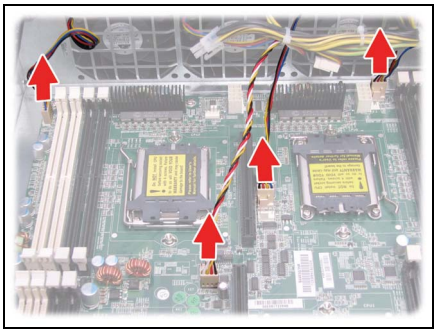


2. Disconnect the DVD-ROM drive cable, SAS/SATA hard drive cables, USB cable, and front panel cables.



NOTE: If there is an FDD installed, disconnect the FDD cable before removing the motherboard.

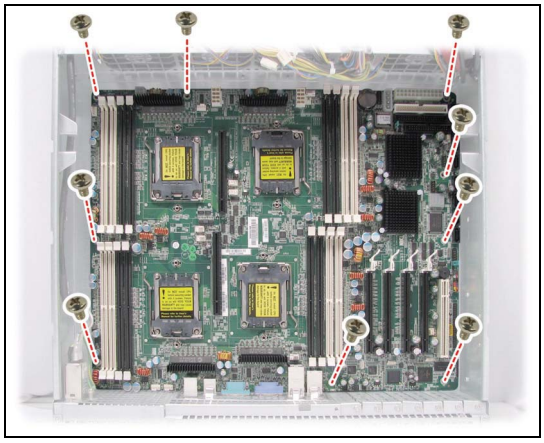
3. Disconnect the fan cables.



3.3.2 Replacing the Motherboard

After removing all of those cables, follow these instructions to remove the motherboard from the chassis.

1. Remove the heat sinks and processors if installed.
2. Remove the nine screws that secure the motherboard to the chassis.



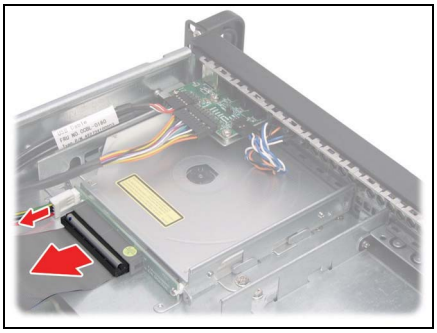
3. Carefully lift the motherboard from the chassis.

NOTE: The motherboard is too large to lift straight out. Lift the front edge of the motherboard up to an angle of about 45º. Then slide the motherboard out, front end first.

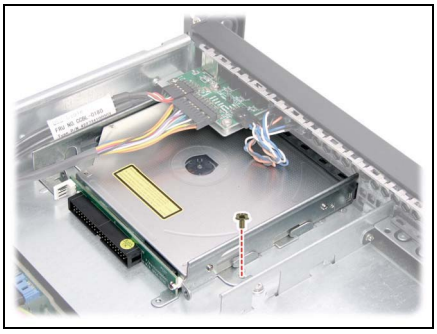
3.4 Replacing the Slim DVD-ROM

Follow these instructions to replace the DVD-ROM.

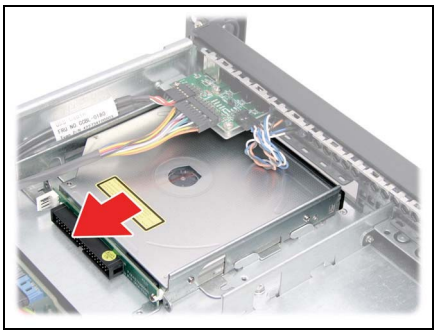
1. Remove the power and data cables from the DVD-ROM backplane.



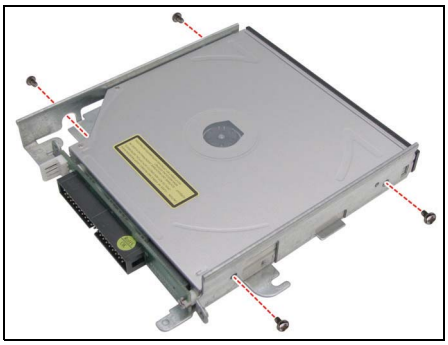
2. Remove the single screw that secures the DVD-ROM module to the chassis.



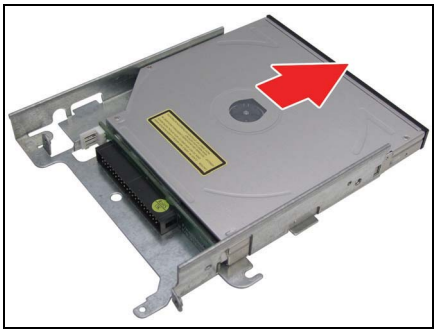
3. Slide the DVD-ROM module out as shown to lift it free of the chassis.



4. Remove the four screws that secure the DVD-ROM drive in the drive bay.



5. Remove the DVD-ROM from the drive bay as shown.



6. Remove the two screws that secure the DVD-ROM backplane to the DVD-ROM drive.

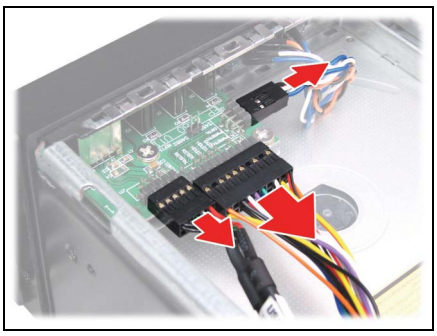
7. Install a new DVD-ROM in the drive bay and secure with four screws.
8. Secure the DVD-ROM backplane to the new DVD-ROM using two screws.

9. Replace the unit into the chassis and secure with a single screw.
10. Replace the power and data cables.

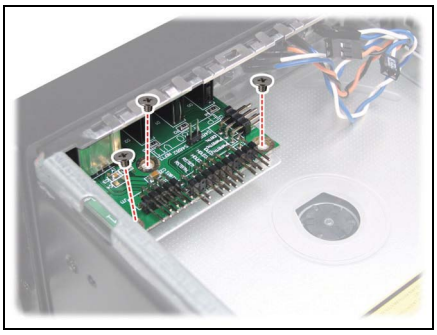
3.5 Replacing the LED Control Board

Follow these instructions to replace the LED control board.

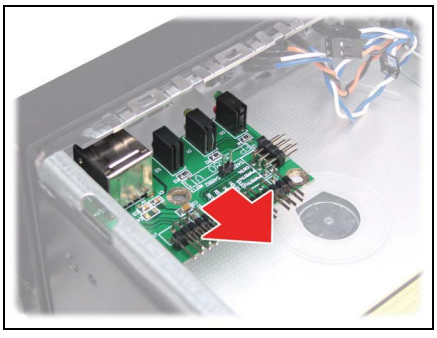
1. Remove all the cables from the LED control board.



2. Remove the three screws that secure the board to the chassis.



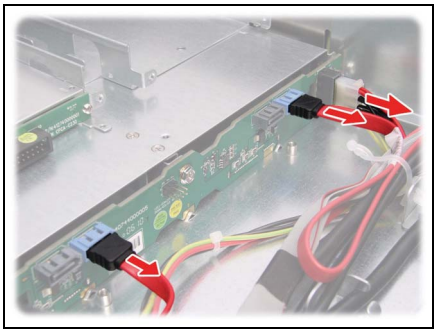
3. Slide back the LED control board and lift it free of the chassis.



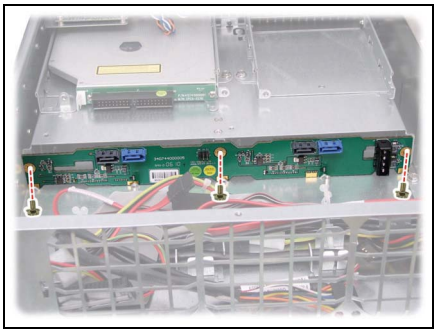
3.6 Replacing the SAS/SATA Backplane

Follow these instructions to replace the SAS/SATA backplane in your TX46-B4985-E system.

1. Disconnect the power and SAS/SATA cables from the SAS/SATA backplane as shown.



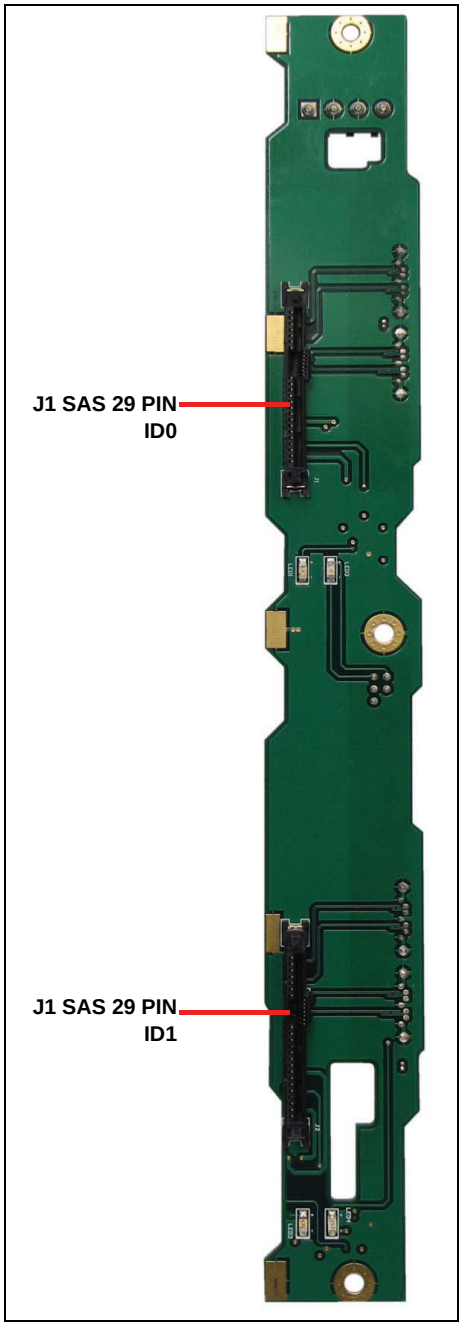
2. Remove the three screws to release the backplane.



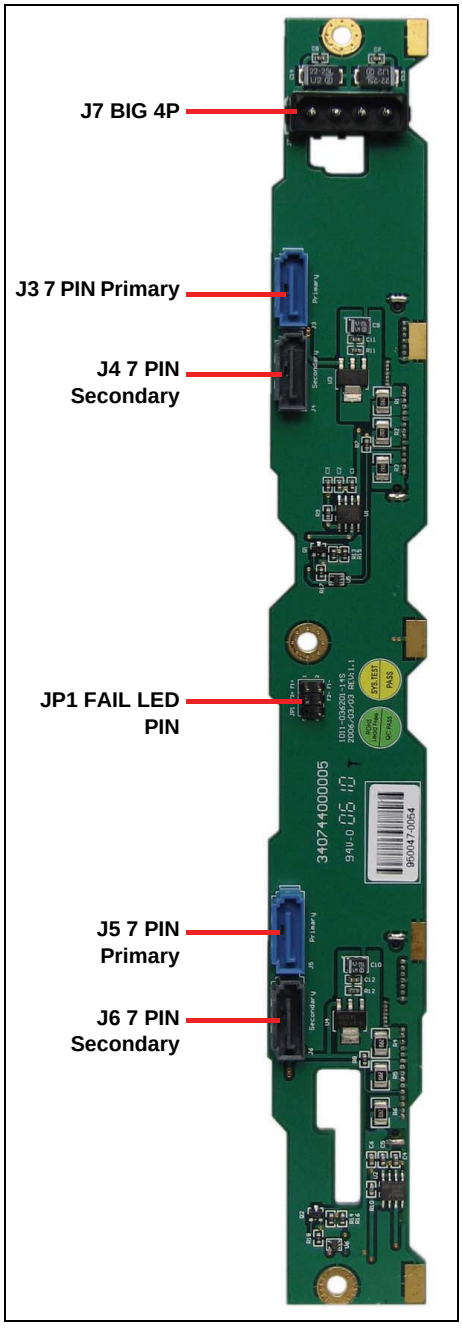
3. Remove the backplane from the chassis.
4. Secure a new backplane in place with three screws.
5. Reconnect the power and SAS/SATA cables.

3.6.1 SAS/SATA Backplane (M1215) Features for TX46-B4985-E

Front View



Rear View


J7 BIG 4P
J3 7 PIN Primary
J4 7 PIN Secondary
JP1 FAIL LED PIN
J5 7 PIN Primary
J6 7 PIN Secondary

3.6.2 SAS/SATA Backplane Connector Pin Definitions

JP1 fail LED pin

1	Fail 1 LED+	2	Fail 1 LED-
3	Fail 2 LED+	4	Fail 2 LED-
5	Key pin	6	N/A

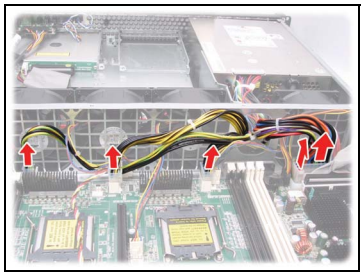
J7 power big 4-pin connector

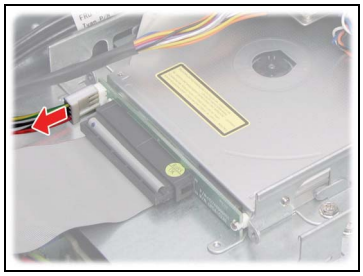
1	VDD +12V
2	GND
3	GND
4	VCC +5V

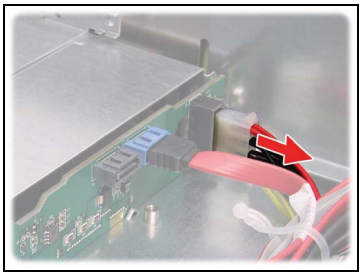
3.7 Replacing the Power Supply

Follow these instructions to replace the power supply in your TX46-B4985-E system.

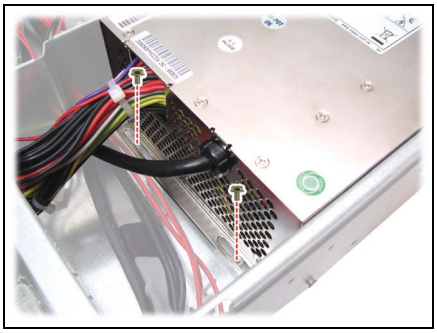
1. Disconnect all the power cables from the motherboard, DVD-ROM drive, and backplane.



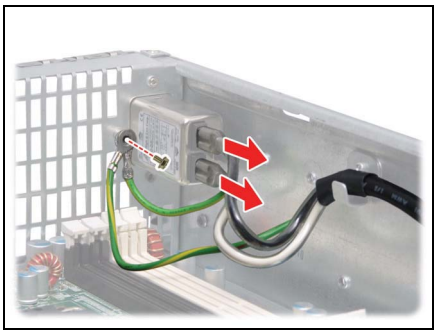




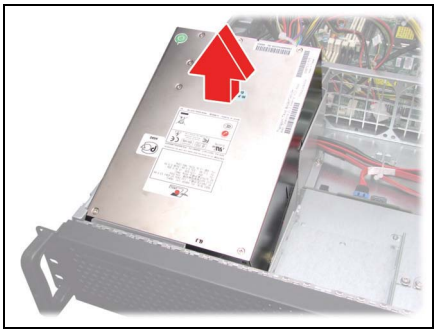
2. Remove the two screws that secure the power supply to the chassis.



3. Remove the single screw that secures the grounding wire to the chassis. Then pull the two spade connectors off the terminals on the back of the AC power socket as shown.



4. Lift the power supply free from the chassis.



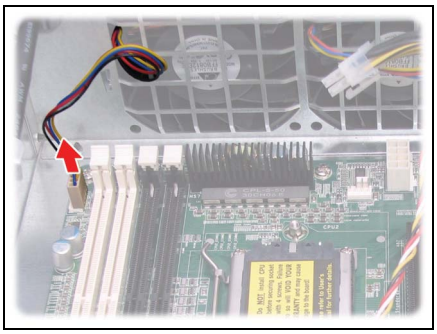
5. After replacement, place and secure the new unit into the chassis with two screws.
6. Reconnect the spade connectors on the AC power socket and reconnect the grounding wire to the chassis.

NOTE: For safety reasons, it is essential that the grounding wire is connected to the chassis.

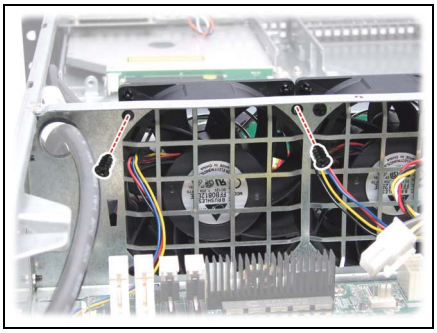
3.8 Replacing the System Fans

Follow these instructions to replace the cooling fans in your TX46-B4985-E system. See “Motherboard Layout” on page 10 for the fan header locations.

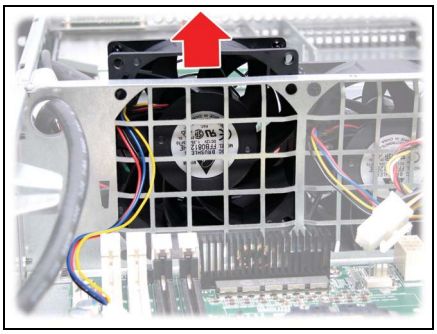
1. Locate the fan connector on the motherboard for the fan you want to replace and unplug the fan cable as shown.



2. Remove the two screws that secure the fan to the chassis.



3. Pull the fan away from the chassis as shown and lift it free.



4. Replace the new fan into the chassis and secure with the two screws.
5. Reconnect the fan cable to the connector on the motherboard.

Appendix I: BIOS Differences

The BIOS of B4985-E is similar to the BIOS of S4985-E. There is only one menu different. You may refer to the attached motherboard manual for the complete BIOS information. The differences between B4985-E and S4985-E is on the “Advanced/Hardware Health Information” menu. See the following for the differences.

B4985-E Advanced/Hardware Health Information

PhoenixBIOS Setup Utility

Advanced

Hardware Monitor:		Item Specific Help
CPU0 Temperature	xxx ºC	All items on this menu cannot be modified in user mode. If any items require changes, please consult your system Supervisor.
CPU1 Temperature	xxx ºC	
CPU2 Temperature	xxx ºC	
CPU3 Temperature	xxx ºC	
sys1 Temperature	xxx ºC	
sys2 Temperature	xxx ºC	
sys3 Temperature	xxx ºC	
sys4 Temperature	xxx ºC	
sys5 Temperature	xxx ºC	
CPU1 Fan Speed	xxxx RPM	
CPU2 Fan Speed	xxxx RPM	
CPU3 Fan Speed	xxxx RPM	
CPU4 Fan Speed	xxxx RPM	
System Fan 1 Speed	xxxx RPM	
System Fan 2 Speed	xxxx RPM	
System Fan 3 Speed	xxxx RPM	
System Fan 4 Speed	xxxx RPM	
CPU0 VDD voltage	xxxx V	
CPU1 VDD voltage	xxxx V	
CPU2 VDD voltage	xxxx V	
CPU3 VDD voltage	xxxx V	
+12V	xxxx V	
+5V	xxxx V	
HT1.2V	xxxx V	
3.3VSB	xxxx V	
CK804 Vcore 1.5V	xxxx V	

F1	Help	↑↓	Select Item	-/+	Change Values	F9	Setup Defaults
Esc	Exit	←→	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit

S4985-E Advanced/Hardware Monitor Information

PhoenixBIOS Setup Utility

Advanced

Hardware Monitor		Item Specific Help
CPU0 Temperature	xxx ºC	
CPU1 Temperature	xxx ºC	
CPU2 Temperature	xxx ºC	
CPU3 Temperature	xxx ºC	
Sys1 Temperature	xxx ºC	
Sys2 Temperature	xxx ºC	
Sys3 Temperature	xxx ºC	
Sys4 Temperature	xxx ºC	
Sys5 Temperature	xxx ºC	
CPU0 Fan Speed	xxxx RPM	
CPU1 Fan Speed	xxxx RPM	
CPU2 Fan Speed	xxxx RPM	
CPU3 Fan Speed	xxxx RPM	
System Fan 0 Speed	xxxx RPM	
System Fan 1 Speed	xxxx RPM	
System Fan 2 Speed	xxxx RPM	
System Fan 3 Speed	xxxx RPM	
System Fan 4 Speed	xxxx RPM	
System Fan 5 Speed	xxxx RPM	
System Fan 6 Speed	xxxx RPM	
System Fan 7 Speed	xxxx RPM	
CPU0 VDD voltage	xxxx V	
CPU1 VDD voltage	xxxx V	
+12V	xxxx V	
+5V	xxxx V	
HT1.2V	xxxx V	
3.3VSB	xxxx V	
CK804 Vcore 1.5V	xxxx V	

F1 Help ↑↓ Select Item -/+ Change Values F9 Setup Defaults
Esc Exit ←→ Select Menu Enter Select ▶ Sub-Menu F10 Previous Values

Table of Differences

	S4985-E	B4985-E
Auto Fan Control	Disabled	Enabled
Hardware Monitor Fan	CPU0 Fan Speed CPU1 Fan Speed CPU2 Fan Speed CPU3 Fan Speed System Fan0 Speed System Fan1 Speed System Fan2 Speed System Fan3 Speed System Fan4 Speed System Fan5 Speed System Fan6 Speed System Fan7 Speed	CPU1 Fan Speed CPU2 Fan Speed CPU3 Fan Speed CPU4 Fan Speed System Fan1 Speed System Fan2 Speed System Fan3 Speed System Fan4 Speed

Appendix II: Cable Connection Tables

SAS/SATA Cables

Table 1: TX46-B4985-E Model

M1215 SAS/SATA Backplane	Connects to	Motherboard
J5	→	SATA0
J3	→	SATA1

FAN Cables

Table 2: System Fan to Motherboard

System Fan	Connects to	Motherboard
FAN 1	→	SYSFAN1 connector
FAN 2	→	CPUFAN3 connector
FAN 3	→	CPUFAN0 connector
FAN 4	→	SYSFAN2 connector

Table 3: Heatsink Cooler Fan to Motherboard

Heatsink Cooler Fan	Connects to	Motherboard
CPU FAN1	→	CPUFAN1 connector
CPU FAN2	→	SYSFAN5 connector
CPU FAN3	→	CPUFAN2 connector
CPU FAN4	→	SYSFAN4 connector

Power Supply Cables

Table 4: Power Supply to Motherboard

Power Supply	Connects to	Motherboard
P1 24-pin power cable	→	PWR0 24-pin connector
P2 8-pin power cable	→	PWR1 8-pin connector
P3 8-pin power cable	→	PWR2 8-pin connector
P4 4-pin power cable	→	PWR3 4-pin connector
P5 4-pin power cable	→	PWR4 4-pin IDE connector

Table 5: Power Supply to Backplane

Power Supply	Connects to	Backplane (M1215)
P6 4-pin power cable	→	J7 4-pin connector

Table 6: Power Supply to DVD-ROM

Power Supply	Connects to	DVD-ROM Backplane
P7 4-pin power cable	→	4-pin connector

Other Cables

Table 7: LED Control Board to Motherboard

LED Control Board	Connects to	Motherboard
JT1 USB connector	→	USB2
2x10 pin front panel header	→	J115
		J122

Table 8: DVD-ROM Related Cables

Motherboard IDE connector	→	DVD-ROM Backplane
P7 4-pin power cable	→	DVD-ROM Backplane

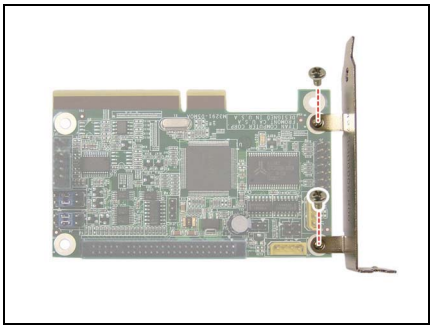
Table 9: FDD Related Cables (Option)

Motherboard FDD connector	→	FDD Backplane JP2
P8 4-pin power cable	→	FDD Backplane JP1
Slim FDD drive (FFC cable)	→	FDD Backplane JP3

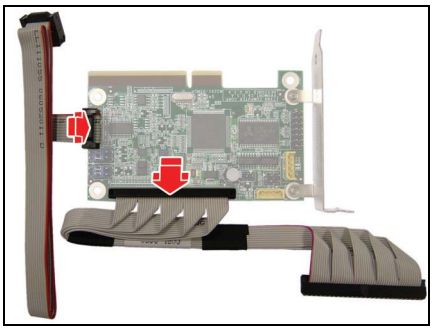
Appendix III: Installing SMDC Card

The following provides you with the information on installing M3291 SMDC card into any PCI slot in your TX46-B4985-E system.

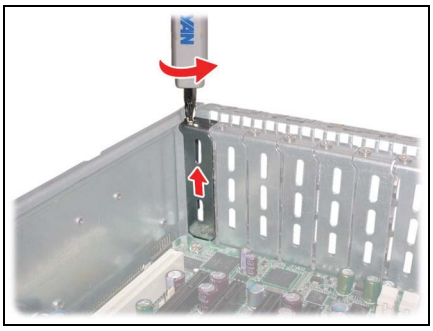
1. Secure M3291 on a low profile PCI bracket as shown.



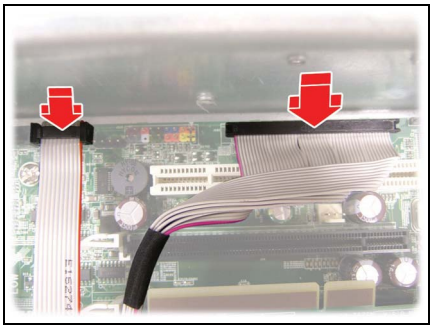
2. Connect the following cables to M3291 as shown.
   a. 2x25 pin SMDC cable to M3291 J1 connector.
   b. 2x5 pin serial cable to M3291 COM port (J2).



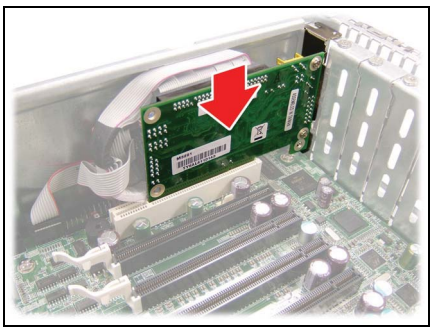
3. Unscrew the blanking plate from the slot as shown. Lift up the blanking plate.



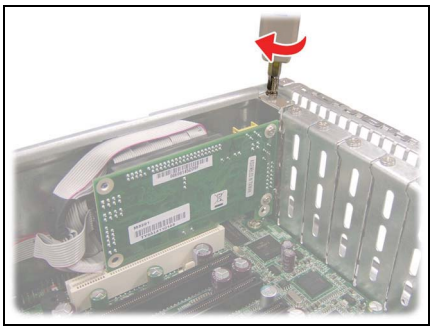
4. Connect the other end of SMDC cable and serial cable to the SMDC connector and COM2 header (J101) on the motherboard.



5. Place the SMDC card in the PCI slot as shown.



6. Secure the PCI bracket with the screw you removed from the blanking plate.



Cable Connection Table

SMDC Card (M3291)	Connects to	Motherboard
J1 connector	→	SMDC connector
J2 COM port	→	J101 COM2 header

Technical Support

If a problem arises with your system, you should first turn to your dealer for direct support. Your system has most likely been configured or designed by them and they should have the best idea of what hardware and software your system contains. Hence, they should be of the most assistance for you. Furthermore, if you purchased your system from a dealer near you, take the system to them directly to have it serviced instead of attempting to do so yourself (which can have expensive consequences).

If these options are not available for you then TYAN Computer Corporation can help.Besides designing innovative and quality products for over a decade, TYAN has continuously offered customers service beyond their expectations. TYAN's website
(**www.tyan.com**) provides easy-to-access resources such as in-depth Linux Online Support sections with downloadable Linux drivers and comprehensive compatibility reports for chassis, memory and much more. With all these convenient resources just a few keystrokes away, users can easily find the latest software and operating system components to keep their systems running as powerful and productive as possible. TYAN also ranks high for its commitment to fast and friendly customer support through email. By offering plenty of options for users, TYAN serves multiple market segments with the industry's most competitive services to support them.

"TYAN's tech support is some of the most impressive we've seen, with great response time and exceptional organization in general" - Anandtech.com

Please feel free to contact us directly for this service at **tech-support@tyan.com**

Help Resources:

1. See the beep codes section of this manual.

2. See the TYAN website for FAQ's, bulletins, driver updates, and other information: http://www.tyan.com

3. Contact your dealer for help BEFORE calling TYAN.

4. Check the TYAN user group: alt.comp.periphs.main-board.TYAN

Returning Merchandise for Service

During the warranty period, contact your distributor or system vendor FIRST for any product problems. This warranty only covers normal customer use and does not cover damages incurred during shipping or failure due to the alteration, mis-use, abuse, or improper maintenance of products.

NOTE: A receipt or copy of your invoice marked with the date of purchase is required before any warranty service can be rendered. You may obtain service by calling the manufacturer for a Return Merchandise Authorization (RMA) number. The RMA number should be prominently displayed on the outside of the shipping carton and the package should be mailed pre-paid. TYAN will pay to have the board shipped back to you.

TYAN Transport TX46-B4985-E User's Manual v1.0

Document No. D1985-100